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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,020	11/24/2003	Akira Matsuda	032130	9168

38834 7590 09/14/2005

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EXAMINER

KOEHLER, ROBERT R

ART UNIT PAPER NUMBER

1775

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/719,020

Applicant(s)

MATSUDA ET AL

Examiner

Robert R. Koehler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on July 5, 2005 (Amdt.).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

RRK.
9-8-05

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Evaluations of the level of ordinary skill in the art requires consideration of such factors as various prior art approaches, types of problems encountered in the art, rapidity with which innovations are made, sophistication of technology involved, educational background of those actively working in the field, commercial success, and failure of others.

The "person having ordinary skill" in this art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The evidence of record including the references and/or admissions are considered to reasonably reflect this level of skill.

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Claims 1 to 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,888,574 (Rice, et al.), the cited prior art of record, in view of Kazanovtse, et al. (WPI World Patent Information Derwent, Vol. 29), the cited prior art of record.

Rice, et al. teaches a multilayered printed circuit board material and a method for producing the board material. The circuit board comprises a substrate, an electrical resistance material layer, and a conductive material layer (for example, a conductive layer of copper foil). The resistance material layer comprises a nickel-phosphorus alloy having up to 30 weight percent phosphorus, and the Ni-P alloy layer is produced by an electroplating technique whereby the plating bath utilizes nickel carbonate, phosphoric acid, and phosphorous acid. The Examiner notes that Rice, et al. teaches away from the usage of sulfate salts and chloride salts, but Example 1 (column 3) does describe a nickel plating bath containing nickel sulfate and nickel chloride. Rice, et al. teaches plating bath temperatures and plating bath pH values which also lie within applicants' claimed temperature range and claimed pH value range. See lines 44 to 61 in column 1, lines 17 to 61 in column 2, and line 28 in column 3 to line 9 in column 5. Rice, et al. does not teach or suggest the usage of nickel plating baths that contain sulfamate ions, the usage of insoluble anodes, or the final surface roughness of the resistance layer. However, Rice, et al. does mention unexpected properties of the electroplated Ni-P resistance layer such as the absence of pitting whenever the nickel plating bath does not contain sulfate ions or chloride ions; see Example 5 in column 4.

Kazanovtse, et al. teaches a nickel plating bath composition for the deposition of nickel-phosphorus alloys on a cathode such as copper or stainless steel. The nickel plating bath comprises nickel sulphamate, nickel chloride, orthophosphoric acid, and zinc phosphate. Kazanovtse, et al. discloses a method of forming a nickel-phosphorus alloy coating on a conductive substrate by using a sulphamate-orthophosphoric acid

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plating bath under the following conditions: pH = 1.2 to 1.6; temperature = 70 to 75° C; and current density of 30 A/dm². See the English-language Abstract in WPI World Patent Information Derwent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected a sulphamate salt such as nickel sulphamate for use in a nickel plating bath as taught by Rice, et al. because Kazanovtse, et al. provides sufficient information about sulphamate-containing nickel plating baths that is very useful for the deposition of Ni-P alloy coatings. A person skilled in the art of nickel electroplating would have been motivated to rely on Kazanovtse, et al. because a result-effective variable (such as the usage of a sulphamate salt in a nickel plating bath) *can be optimized* by a skilled person in order to achieve a recognized result (such as a Ni-P alloy plating having improved structural properties or characteristics). See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical.

Response to Arguments

Applicant's arguments with respect to claims 1 to 19 have been considered but are moot in view of the new ground(s) of rejection.

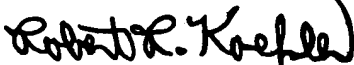
Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Robert Koehler whose telephone number is (571) 272-1536. The Examiner can normally be reached on Tuesday to Friday from 9:30 AM to 7:00 PM. The Examiner can also be reached on alternate Mondays.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on **(571) 272-1535**. The official Fax No. is **(571) 273-8300**, and the After-Final Fax No. is **(571) 273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).



ROBERT R. KOEHLER
PRIMARY EXAMINER

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September 9, 2005